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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/331,723	08/18/1999	JOHN E. BOYNTON	2185-156PCT	2008

7590 11/22/2005

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EXAMINER

MEHTA, ASHWIN D

ART UNIT	PAPER NUMBER
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1638

DATE MAILED: 11/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/331,723

Applicant(s)

BOYNTON ET AL.

Examiner

Ashwin Mehta

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,6,7,10-16,18,20-24 and 43-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6,7,10-16,18,20-24 and 43-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 August 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. The objection to the specification under 35 U.S.C. 132 is withdrawn in light of Applicants' argument and the citation of relevant page numbers in the reference in question, Sambrook et al., on page 46 of the specification.
3. The objection to claim 10 for being improperly multiply dependent is withdrawn, in light of the amendment to claim 7.
4. The rejection of claims 48 and 49 under 35 U.S.C. 112, first paragraph, for containing new matter is withdrawn in light of Applicants' arguments.

Specification

5. The specification remains objected to under 35 U.S.C. 132 for containing new matter, for the reasons of record stated in the Office action mailed March 8, 2005. Applicants traverse the objection in the paper filed September 8, 2005. Applicants' arguments have been fully considered but were not found persuasive.

Applicants argue

Claim Rejections - 35 USC § 112

6. Claims 1, 2, 4, 6, 7, 10-14, and 43-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1: the amendments to the claim render the claim indefinite. The recitation, “wherein said sequence encodes an amino acid sequence wherein the amino acid at position 13 of SEQ ID NO: 1 is” is confusing. The amino acid sequence encoded by the sequence in “wherein said sequence”, is not the same as SEQ ID NO: 1. The recitation is referring to what one sequence encodes, but then discusses it as if it is SEQ ID NO: 1.

In claim 7: the claim recites the limitation, “wherein the amino acid at the position corresponding to position claim 13 of SEQ ID NO: 1 is methionine”. There is insufficient antecedent basis for “the amino acid at the position corresponding to position claim 13 of SEQ ID NO: 1” in the claim or parent claim 1.

7. Claims 1, 2, 4, 6, 7, 10-16, 18, 20-24, and 43-47 remain rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, or the reasons of record stated in the Office action mailed March 8, 20005. Applicants traverse the rejection in the paper submitted September 8, 2005. Applicants’ arguments were fully considered but were not found persuasive.

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Applicants argue one of ordinary skill in the art understands what is meant by stringent hybridization conditions based on the state of the art (response, page 17, 2nd full paragraph). However, all stringency conditions are not the same, and very different nucleic acid sequences would bind to a template sequence under different stringency conditions. Applicants cite MPEP 2106C (response, page 17, 2nd full paragraph). However, that section pertains to computer-related inventions.

Applicants repeat arguments made in their reply under 37 CFR 1.111 of July 16, 2003, because they allegedly were not addressed by the Office. The arguments are in regards to the importance of washing to hybridization (response, page 18, 1st-3rd full paragraphs). However, the arguments were addressed in the Office action mailed October 17, 2003, paragraph bridging pages 4-5, which was in response to the paper filed July 16, 2003, and in the Office action mailed March 8, 2005, paragraph bridging pages 4-5), and are incorporated herein.

8. Claims 1, 2, 4, 6, 7, 10-16, 18, 20-24, and 43-49 remain rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention, for the reasons of record stated in the Office action mailed March 8, 2005. Applicants traverse the rejection in the paper submitted September 8, 2005. Applicants' arguments were fully considered but were not found persuasive.

Applicants cite a post-filing publication, Hanin et al., and argue that it discloses several publications regarding homologous recombination in plants from the early 1990s (response, page

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19, 2nd full paragraph). However, Terada et al. and Puchta, which were discussed in previous Office actions, were published in 2002 and teach the shortcomings of previously published attempts at homologous recombination in plants. Even Hanin et al. point out that the methods discussed in the previous publications have limited reproducibility, showing only one plant with an anticipated event (pages 671-672). This shows that homologous recombination in plants was not routine in the prior art, and that undue experimentation is required by one skilled in the art to repeat the experiments disclosed in prior art publications.

Applicants also argue that homologous recombination has been used in the prior art with *Agrobacterium tumefaciens*, to transform plant cells (response, page 19, 2nd full paragraph). However, *Agrobacterium*-mediated transformation of plant cells is not analogous. It is also noted that while plant cells have been transformed using *Agrobacterium* T-DNA for decades, a repeatable process for homologous recombination was not devised in the prior art.

Applicants also argue that the claims do not require homologous recombination or insertion of the DNA fragment into any particular location in the plant genome (response, page 19, 3rd full paragraph). However, the claimed methods encompass introduction of DNA fragments that do not encode a full-length PPO. The specification teaches that introduction of a Xho/PmaC2.6 DNA fragment, which is a portion of a mutant *Chlamydomonas* PPO gene isolated from a herbicide-resistant strain, into a herbicide-sensitive *Chlamydomonas* strain conferred herbicide resistance to that strain. However, as explained in previous Office actions, U.S. Patent No. 6,160,206, which shares three inventors with the instant application, teaches that the fragments of the same mutant PPO gene had to integrate by homologous recombination into the PPO gene in the herbicide-sensitive *Chlamydomonas* strain to confer resistance to the strain

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against PPO-inhibiting herbicides. Given this teaching, the DNA fragments encompassed by the instant claims that do not encode a full-length PPO containing the recited mutation would have to integrate into the PPO gene of the host plant cell or plant by homologous recombination in order to confer resistance to PPO-inhibiting herbicides. However, methods for such gene targeting are not enabled for plants or plant cells or algal cells other than *Chlamydomonas*, as discussed above and in the previous Office actions.

Summary

9. Claims 1, 2, 4, 6, 7, 10-16, 18, 20-24, and 43-49 remain rejected.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Contact Information

Any inquiry concerning this or earlier communications from the Examiner should be directed to Ashwin Mehta, whose telephone number is 571-272-0803. The Examiner can normally be reached from 8:00 A.M to 5:30 P.M. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Gary Jones, can be reached at 571-272-0745. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300. Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

November 2, 2005



Ashwin D. Mehta, Ph.D.
Primary Examiner
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